

SUBTERRANIPHYLLUM, A NEW TERTIARY CALCAREOUS ALGA

by G. F. ELLIOTT

ABSTRACT. A distinctive coarse-celled branching coralline alga, characteristic of the Oligocene of the Mediterranean and Middle East, is described as *Subterraniophyllum thomasi* gen. et. sp. nov. and briefly discussed.

THE branching corallines, of which the familiar little *Corallina officinalis* Linn. is a Recent example, are common fossils in the Tertiary, being represented usually by the dissociated segments, which come apart after the death of the plant. Whilst genera such as *Corallina*, *Amphiroa*, and *Jania* are normally readily distinguishable, they range from Eocene to Recent, and species are difficult to distinguish for dating purposes. The form described below possesses a more restricted range, differs conspicuously from the genera named, and has proved of service in dating Tethyan Tertiary rocks in the Mediterranean and Middle East.

Family CORALLINACEAE

Subfamily CORALLINAEAE

Genus SUBTERRANIPHYLLUM gen. nov.

Diagnosis. Branching segmented coralline alga, differing from other genera of the subfamily in the distinctive very coarse and irregular cell-mesh of the medullary tissue; conceptacles not seen. Type species *S. thomasi* sp. nov.

Subterraniophyllum thomasi sp. nov.

Plate 13

Dendrophyllum cf. *gurgurdanensis* Thomas MS., Van Bellen 1956, pl. 2, figs. *b*, *c* (no description).

Description. Coralline segments about 1.5 mm. long by 0.75 mm. maximum diameter, bead-like in form, circular in cross-section, ends rounded: a minority of segments show incipient bifurcation. Medullary tissue with coarse irregular cell-mesh: narrow perithallial zone with a much finer, regular, mesh. In vertical section the medullary cells are seen to be about 0.117 mm. high by 0.078 mm. wide: the upper and lower limits of cell-rows are parallel and regularly transverse, but the lateral walls are irregularly set both within and as between different rows. They are straight or curved and only rarely parallel, so giving rise to rows of irregular-trapezoid cells. Laterally they pass by a narrow transition-zone of irregular curved cells into a fine bonded-brick pattern of small rectangular perithallial cells, about 0.015 mm. by 0.010 mm. In transverse section

[Palaeontology, Vol. 1, Part 1, 1957, pp. 73-75, pl. 13]

the medullary tissue shows as a clear central mesh of irregular-polygonal cells, bordered by a narrow well-defined marginal zone of two to three rows of perithallial cells. In thin section the cell-wall material, especially that of the perithallial tissue, appears almost black, more so than in other corallines, and this feature is distinctive.

Holotype. The specimen figured in Pl. 13, fig. 5; Persia, Gach Saran Well 10, depth 4,725–6 ft.; about the middle of the Rupelian (Middle Oligocene). Brit. Mus. (Nat. Hist.) Dept. Pal. reg. no. V. 34628.

Paratypes. The specimens figured in Pl. 13, figs. 2, 3, 4, 9; same locality and geological horizon as the holotype, well-depths 4,723–6 ft. Brit. Mus. reg. nos. V. 34628, V. 34629.

Geological horizon. Locally abundant at different horizons throughout the Tethyan Oligocene (Lattorfian to Chattian) of the Mediterranean and Middle East. Known less commonly from the Upper Eocene and Aquitanian (basal Miocene) of Sicily and from the Aquitanian of Persia, but only of common occurrence in the Oligocene (e.g. the subsurface Oligocene of Kirkuk, Iraq; Van Bellen 1956).

Remarks. This fossil was first noted as stratigraphically useful by Mr. A. N. Thomas in his studies of the Persian Asmari Limestone (Thomas 1950, 1952) but no account was published by him. In unpublished reports it has often been mentioned under manuscript names, and was figured as *Dendrophyllum* cf. *gurgurdanensis* Thomas MS. by Van Bellen (1956). The opportunity is now taken to dedicate the species to Mr. Thomas, in recognition of his work on Persian micropalaeontology.

Material examined from Sicily, Iraq, Persia, and Oman shows some small variation in segment- and cell-size, but not more than one might expect from such a coralline alga, and it does not suggest subdivision of the species either in its vertical range or horizontal distribution.

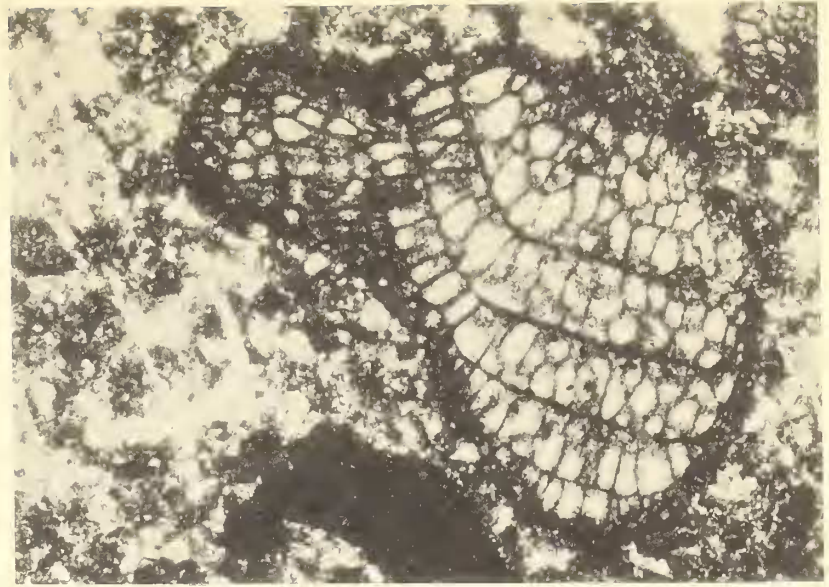
My thanks are offered to Mr. Thomas, who generously ceded me his publication-priority over this species, and to Dr. F. E. Eames of British Petroleum for information on its different occurrences and helpful discussion of this and other corallines; similarly to Dr. A. H. Smout of Iraq Petroleum, and to the chief geologists and managements of British Petroleum Co., Ltd., and Iraq Petroleum Co., Ltd., for permission to publish this note.

EXPLANATION OF PLATE 13

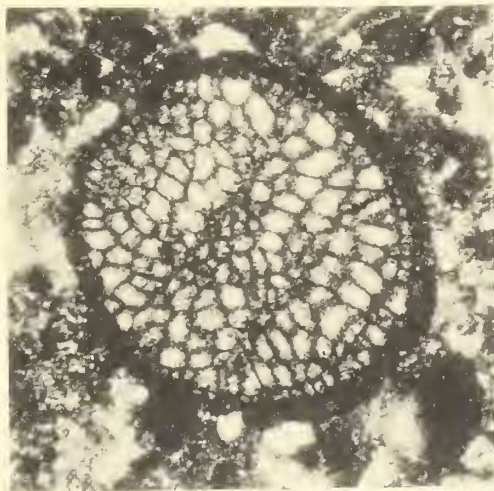
Figs. 1–9. Thin sections of segments of *Subterraniophyllum thomasi* sp. nov., $\times 50$: nos. 2, 3, 4, 5, and 9 from the Middle Oligocene of Gach Saran Well No. 6, Persia, 4,723–6 ft.: nos. 1 and 6 from the Oligocene of Falaij, Oman, Arabia: nos. 7 and 8 from the Oligocene of Tawi Silaim, Oman. 1, Oblique-transverse section; Brit. Mus. (Nat. Hist.), Dept. Pal. reg. no. V. 34630. 2, Oblique section of bifurcating segment, reg. no. V. 34628. 3, Transverse section, reg. no. V. 34629. 4, Vertical section of incomplete segment, reg. no. V. 34629. 5, Vertical section of nearly complete segment: holotype, reg. no. V. 34628. 6, Oblique transverse section, reg. no. V. 34630. 7, Near-vertical section of bifurcating segment, reg. no. V. 34631. 8, Transverse section, reg. no. V. 34631. 9, Vertical section of curved segment, reg. no. V. 34629.



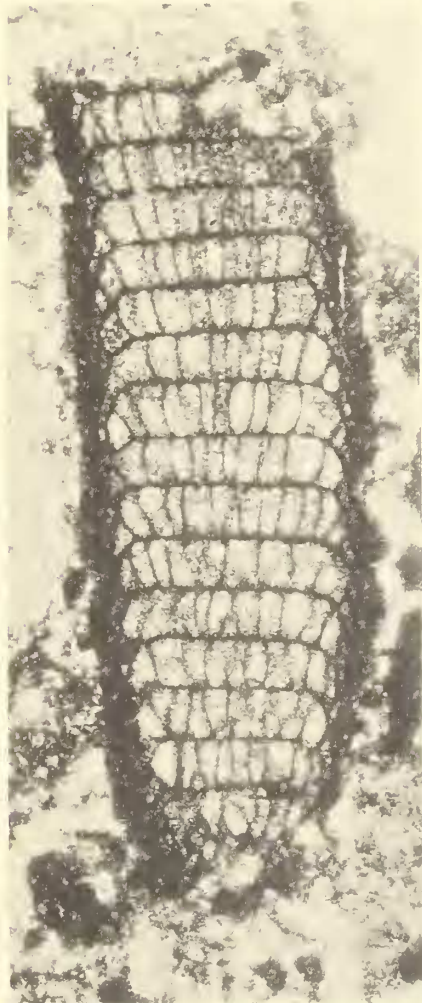
1



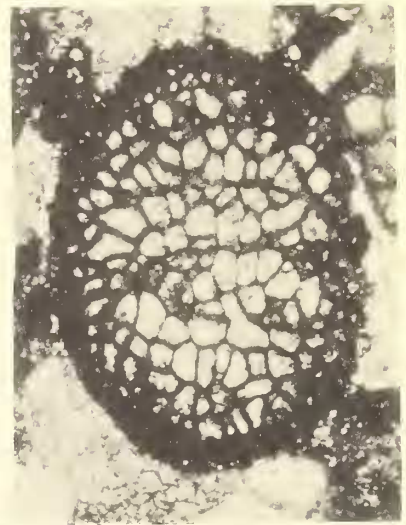
2



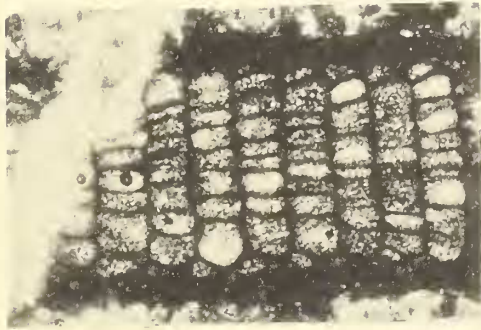
3



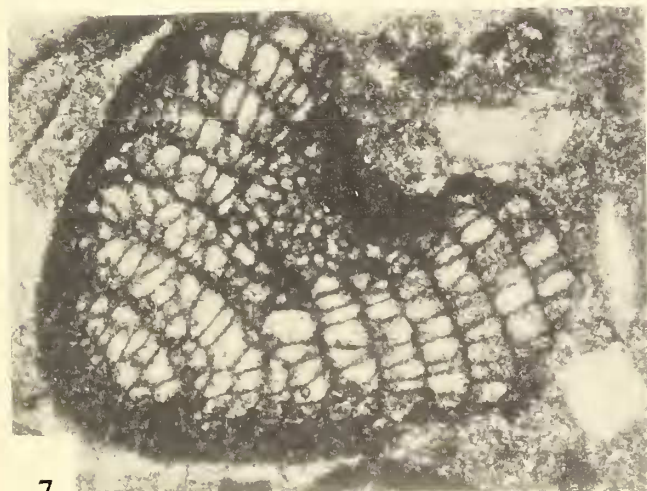
5



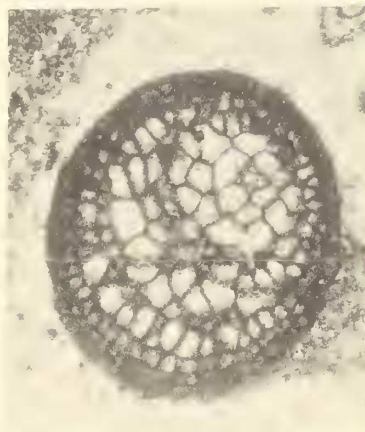
6



4



7



8



9

ELLIOTT, *Subterraniophyllum*